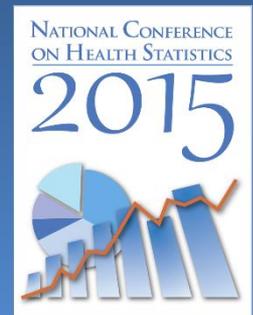


# NHANES Genetics Program

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Encourage research at the  
intersection of genetics  
and public health using NHANES

# NHANES DNA Repository and Genetic Data Program

- Unique DNA research collection – nationally representative
- Combine population-level genetic data & health risk factor and outcome data
  - dietary, environmental, health care information

# Program inception

- Began in 1991
- Two parts
  - DNA Specimen Repository
  - Genetic Data Repository

# DNA Specimen Repository

- Maintains DNA specimens for future genetic studies
- Requires approved proposal to gain access
- Resulting genetic data combined with other NHANES data

# DNA collection

- NHANES III – 1991-1994
  - Ages 12 years and older
- NHANES 2-year cycles – 1999-2002, 2007-2008, 2009-2010, 2011-2012
  - Ages 20 years and older

# Specimen collection and processing

- Consent obtained to collect blood for future studies
- Blood collected at NHANES mobile exam center
- DNA isolated from blood and stored
  - CDC National Center for Environmental Health (NCEH) Molecular Biology Laboratory

# Number of participant DNA specimens

## NHANES survey cycle and eligible sample n

NHANES III	n=7159
1999-2002	n=7839
2007-2008	n=4615
2009-2010	n=3898
2011-2012	n=~3800

# Researcher's access

## Prior to 2012

- Researchers submitted proposal
- Approvals
  - NHANES Genetic Technical Panel
  - NCHS Human Subjects Officer
  - NCHS Confidentiality Officer
  - NCHS Ethics Review Board
- Agreement signed, specimens received

# Resulting genetic data

- NHANES quality control review
- Genetic variants restricted access
- Genetic variants available for analysis in NCHS Research Data Center

# Program Reevaluation after 2012

- Concerns about returning results to participants
- Program paused to reevaluate – no new proposals reviewed
- February, 2014 workshop
  - Sponsored by NCHS and National Academy of Science Committee on National Statistics
  - Expert geneticists and bioethicists participated

# Program Reevaluation after 2012

- Workshop Outcome – *existing DNA specimens*, concerns did *not* support need to report results
- March 2015 – approved re-opening DNA Specimen Repository
  - NCHS Board of Scientific Counselors
  - NCHS Ethics Review Board
  - January 2016 – plan to accept new proposals

# Publications using NHANES Genetic Data

- >60 publications in peer-reviewed journals
  - Human Genetics
  - Annals of Human Genetics
  - Genetic Epidemiology
  - Epidemiology
  - American Journal of Epidemiology

Thank you

More information

[www.cdc.gov/nchs/nhanes/  
biospecimens/biospecimens.  
htm](http://www.cdc.gov/nchs/nhanes/biospecimens/biospecimens.htm)